

intellectual methods that can be explicitly stated." The book is the product of a ten-year effort by a physician and two philosophers to illuminate the cognitive and logical underpinnings of diagnosis and decision making in modern clinical practice.

Unlike many highly theoretical undertakings, this book rarely strays far from the safety of everyday language and real-life circumstances. Chapter two contains a complete case report of a young woman's medical work-up for the chief complaints of fever, fatigue, and arthralgia. The tale is told in the voice of the omniscient narrator, and so reads like a novel, complete with dialogue. Subsequent chapters expose the reader to fundamental concepts in the diverse disciplines of clinical research design, inferential logic, and the philosophy of science. Chapter seven addresses some of the difficulties which have traditionally been encountered in the attempt to define the concept of "disease." Throughout these discussions, new vocabulary is introduced thoughtfully, and points are illustrated using examples from the initial case report, thereby making the material quite accessible to the medical reader.

The authors arrive at their model of clinical reasoning in the book's final chapters, integrating the preceding theoretical material with further clinical illustration. The section on incorrect stereotypes of the diagnostician is particularly interesting. The "diagnostician as detective" stereotype is said to break down, for example, because the incomplete explanatory power of current medical information dampens the effectiveness of purely deductive inference. The book concludes with a re-analysis of the initial case report framed against the background of the new theoretical model.

I found *Reasoning in Medicine* to be generally intriguing and would recommend it to the reader who seeks a concise presentation of topics such as decision analysis or inductive inference in contemporary medicine. I do not anticipate that this volume will serve to "ease the transition from preclinical to clinical training," as its authors hope, however. The authors freely admit that decision analysis is impractical as a clinical tool at this time. More pointedly, I recall that, as I entered that transition period, my awareness that a profound cognitive shift was taking place altered neither the nature nor the amount of effort required to cope with the process of differential diagnosis. Similarly, I suspect that the neophyte, as well as the experienced physician, will find that the abstract model of diagnostic reasoning presented in this book is not assimilable at the level of one's own clinical performance.

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ACADEMIC SCIENTISTS AND THE PHARMACEUTICAL INDUSTRY: COOPERATIVE RESEARCH IN TWENTIETH-CENTURY AMERICA. By John P. Swann. Baltimore, Johns Hopkins Press, 1988. 249 pp. \$32.50.

In the current era of biotechnological revolution, corporate-funded scientific research and university-industry collaborations have become an accepted, nearly commonplace occurrence. The historical precedents for this modern-day relationship between the business world and academe, however, have been a scantily documented subject and provide a fascinating new area of exploration within the history of science and medicine. The present volume is a scholarly, ambitious attempt to begin to fill this void.

While rather dry in tone (not surprisingly; the book is drawn largely from the

author's doctoral dissertation), this is a work rich in content and historical detail. Swann traces the emergence and development of industrial biomedical research and university-industry interactions in America during the first half of this century, and analyzes the role of the academic scientist as general consultant, as specialist consultant, and as industrial project coordinator. The author gathers his information from an impressive number of interviews as well as from what must have been endless searches through the archives of Abbott Laboratories, Eli Lilly and Company, Merck, and the Food and Drug Administration. The book is meticulously footnoted and possesses an extensive bibliography, a valuable resource for others in this field.

Though it is unfortunate that this interesting analysis does not continue past World War II, Swann has carefully analyzed the foundations and early motivations that inspired university-industry collaborations and has provided a scholarly study to which others will, it is hoped, add and continue. While perhaps not appropriate for the casual reader, this volume is an important and novel contribution to the field of twentieth century history of science and provides both an excellent resource and a fascinating story for those interested in the origins of collaborative research and the pharmaceutical industry.

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